**NPRM-11708 and WT 16-239 David H. Bernstein, AA6YQ September 16, 2016**

Section 97.221 permits an automatically controlled station to transmit in response to interrogation by a remote station. In this form of operation, the remote station is not in control of the automatically controlled station – rather, the remote station activates the automatic station by transmitting a request in the protocol understood by the automatic station. Section 97.221(c) limits automatically controlled stations to a maximum bandwidth of 500 hertz unless transmitting in one of the frequency ranges specified in 97.221(b).

If the FCC's proposed RM-11708 rulemaking eliminates all bandwidth restrictions, then 97.221(c) would no longer confine automatically controlled stations with a bandwidth greater than 500 hertz to the frequency ranges specified in 97.221(b). Because a remote station cannot reliably know whether transmission by the automatic station it activates will interfere with communications among other stations already in progress on the frequency, automatic stations often interfere with existing communications among other stations. Though this interference has so far been confined to the frequency ranges specified in 97.221(b), it has none-the-less generated significant disruption and conflict.

When the FCC added Section 97.221 in April 1995, it acknowledged this problem, stating in PR Docket No. 94-59 "We do recognize the concerns of those who oppose the proposal on the basis of potential interference, and in response to these concerns we are limiting when automatic control can be employed. First, the control operator of the station that is connected to the automatically controlled station must prevent the automatically controlled station from causing interference. Second, we are designating subbands to which transmissions between two automatically controlled stations are confined. These subbands are a small portion of the spectrum otherwise available for digital emission types. We also are confident in the ability of the amateur service community to respond, as it has in the past, to the challenge of minimizing interference with novel technical and operational approaches to the use of shared frequency bands."

Given its foresight in establishing the 97.221(b) frequency ranges as a laboratory in which interference minimization techniques have been explored, and given the successful development within that laboratory of digital signal processing algorithms that can effectively determine whether a frequency is already occupied by a signal employing common amateur radio modulation schemes like CW, SSB, RTTY, PSK, and Pactor, the FCC should determine whether these algorithms satisfy the challenge posed in PR Docket No. 94-59, and if so require their use in every operational automatic station.

Unless the interference caused by automatic stations can be mitigated, the FCC's RM-11708 rulemaking should leave 97.221 and its bandwidth limits in place, with automatic stations operating within the 97.221(b) frequency ranges limited to a maximum bandwidth of 1800 hertz. Allowing automatic stations with bandwidths greater than 500 hertz to operate outside the 97.221(b) frequency ranges without a competent means of minimizing interference would result in an explosion of interference from automatic stations across the amateur bands.

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